STRUCTURE AND METHOD FOR ENHANCED PERFORMANCE IN SEMICONDUCTOR SUBSTRATES

ABSTRACT OF THE DISCLOSURE

An etched substrate structure is augmented by conductive material to provide enhanced electrical and/or thermal performance. A semiconductor device substrate comprising active regions defined on a top surface is masked and etched to define a pattern of blind features in a bottom surface of the substrate. A conductive material is then deposited on the surface of the blind features. The replacement of semiconductor material with the conductive material lowers the resistance between the active elements on the top surface and the bottom surface. The blind features may be placed in proximity to parasitic bipolar transistors in order to increase immunity to latchup. During wafer processing, a pattern of grooves aligned opposite to a scribe street pattern may be etched on the wafer back side in order to facilitate the separation of individual devices.